

# **EXHIBIT X**

CONFIDENTIAL – SUBJECT TO PROTECTIVE ORDER

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS**

UNITED STATES OF AMERICA, et al.,

Plaintiffs,

v.

AMERICAN AIRLINES GROUP INC. and  
JETBLUE AIRWAYS CORPORATION,

Defendants.

Civil Action No. 1:21-cv-11558-LTS

**CONFIDENTIAL**

**Expert Report of Dennis W. Carlton**

**July 11, 2022**

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**D. Actual Fares Contradict the Predictions of Dr. Miller’s Simulation Model.**

55. Dr. Miller predicts fare increases as a result of the NEA, but makes no attempt to test the accuracy of his predictions by looking at actual fares after the NEA was implemented.<sup>65</sup> Had he done so (as I have done, see Section III), he would have found that his predictions are inconsistent with the facts.

56. Because the parties began implementing the NEA in February 2021, there are three quarters of post-NEA fare data available, and it is possible to compare Dr. Miller’s predictions to what has actually happened. As I show in this section of my report, Dr. Miller’s predictions are contradicted by the empirical evidence – recent data on fares – showing the actual effects of the NEA.

57. As I have discussed in Section III of this report, a large share of Dr. Miller’s overcharge is from predicted fare increases on the 11 Boston nonstop overlaps, including on routes “carved out” of the NEA, so I first analyze his predictions for Boston nonstop-overlap routes versus Boston control routes. As I have discussed, the weighted average fare increase predicted by Dr. Miller across the 11 Boston nonstop overlap routes is 28.7 percent, ranging from 7.1 percent (Boston – Chicago) to 90.1 percent (Boston – Charlotte).<sup>66</sup> To evaluate Dr. Miller’s predictions, I calculate the actual change in average fares on each route between the second, third, and fourth quarters of 2019 and the second, third, and fourth quarters of 2021. For example, between the second quarters of 2019 and 2021, the average actual change in fares on the 11 Boston nonstop overlaps was -6.0 percent. Between the third quarters of 2019 and 2021, the average actual change was 1.3 percent; and between the fourth quarters of 2019 and 2021, the average actual change was -9.2 percent. That is, as shown in Table 6, Dr. Miller’s “prediction error” (his predicted fare increase minus the actual fare increase) was 34.6

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65. Indeed, as I have discussed, Dr. Miller’s backup materials do not include any fare data from 2021.

66. See Miller Report, at Exhibit 25, at 124.

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percentage points in the second quarter of 2021 (i.e., 28.7 percent vs. -6.0 percent); 27.4 percentage points in the third quarter of 2021; and 37.8 percentage points in the fourth quarter of 2021. Dr. Miller's prediction errors are especially large in several of the Boston nonstop overlaps. For example, Dr. Miller's prediction errors for Boston – Washington National are 70.9 percentage points in the second quarter of 2021; 57.3 percentage points in the third quarter; and 76.9 percentage points in the fourth quarter. These large prediction errors for the Boston nonstop overlaps indicate that Dr. Miller's model is unreliable – the predictions from his model are just wrong.<sup>67</sup>

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67. Changes in actual fares between 2019 and 2021 reflect the effect of the NEA, as well as changes in economic conditions, including the effects of the COVID-19 pandemic. Thus, it is possible that Dr. Miller could claim that his large prediction errors on the Boston nonstop overlaps reflect the effects of the COVID-19 pandemic or other factors that are not included in his simulation model, and therefore the large prediction errors do not indicate that his model is unreliable. But there is no reason to expect that such other factors should affect the Boston control routes in my earlier analysis (i.e., non-overlap and mixed-overlap routes) differently than they affect the Boston nonstop overlaps. That is, Dr. Miller's prediction errors on the Boston control routes capture the effect of the other factors. Thus, if Dr. Miller's prediction errors are smaller on the Boston control routes than on the Boston nonstop overlaps, the large prediction errors on the nonstop overlaps show that Dr. Miller's model is unreliable. Dr. Miller's average prediction errors for the Boston control routes are -2.0 percentage points in the second quarter of 2021; -14.9 percentage points in the third quarter of 2021; and -5.7 percentage points in the third quarter of 2021. See Appendix A-1. That is, adding controls to my analysis of Dr. Miller's prediction errors does not change my conclusion that Dr. Miller's simulation model fails to accurately predict what actually happened to fares on the Boston nonstop overlaps.

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**Table 6**  
**Predicted and Actual Fare Changes on Boston Nonstop Overlaps**

Route	2019 Passengers	Dr. Miller Predicted	Actual 2019 vs 2021		
			Q2	Q3	Q4
Boston (BOS) - Washington National (DCA)	440,430	54.7%	-16.2%	2.6%	-22.2%
Boston (BOS) - Charlotte (CLT)	170,100	90.1%	-0.3%	-1.6%	-10.0%
Boston (BOS) - Philadelphia (PHL)	296,210	44.0%	11.6%	3.8%	-6.4%
Boston (BOS) - Los Angeles (BUR/ONT/LAX/SNA/LGB)	382,050	10.9%	2.1%	3.8%	13.0%
Boston (BOS) - Miami (MIA/FLL)	368,380	17.7%	-36.2%	-25.9%	-12.2%
Boston (BOS) - Phoenix (AZA/PHX)	140,690	32.1%	-11.3%	2.2%	7.3%
Boston (BOS) - Dallas/Fort Worth (DFW/DAL)	252,530	21.7%	2.5%	11.1%	-10.9%
Boston (BOS) - NYC (JFK/LGA)	298,590	12.3%	1.1%	-4.6%	-42.4%
Boston (BOS) - Chicago (MDW/ORD)	496,420	7.1%	-3.1%	14.0%	1.8%
Boston (BOS) - Rochester (ROC)	17,910	84.9%	31.0%	25.4%	-6.5%
Boston (BOS) - Syracuse (SYR)	8,540	60.1%	97.6%	69.8%	23.6%
<b>Weighted Average</b>		<b>28.7%</b>	<b>-6.0%</b>	<b>1.3%</b>	<b>-9.2%</b>
<b>Weighted Prediction Error</b>			<b>34.6%</b>	<b>27.4%</b>	<b>37.8%</b>

Sources: Dr. Miller's backup materials; DOT DB1B data for 2021.

58. I do the same type of analysis for JFK/LGA – that is, I compare Dr. Miller's predicted fare increases to actual fare changes. I reach the same conclusion as I did with my analysis of the Boston nonstop overlaps – Dr. Miller's predictions are inconsistent with the facts. The weighted average fare increase predicted by Dr. Miller across the 18 JFK/LGA nonstop overlaps is 4.8 percent. Between the second quarters of 2019 and 2021, the average actual change in fares on the 18 JFK/LGA nonstop overlaps was -12.7 percent. Between the third quarters of 2019 and 2021, the average actual change was -2.0 percent; and between the fourth quarters of 2019 and 2021, the average actual change was -16.8 percent. That is, as shown in Table 7, Dr. Miller's weighted average prediction error was 17.5 percentage points in the second quarter of 2021 (i.e., 4.8 percent vs. -12.7 percent); 6.8 percentage points in the third quarter of 2021; and 21.6 percentage points in the fourth quarter of 2021.<sup>68</sup> Again, Dr. Miller's prediction

68. Dr. Miller also estimates a fare increase of 2.6 percent for Newark-Miami. See Miller Report, Exhibit 25, at 124. The actual change in average fares for this route was -39.0 percent between the second quarters of 2019 and 2021; -31.0 percent between the third quarters of 2019 and 2021; and -20.3 percent between the fourth quarters of 2019 and 2021, so that Dr. Miller's prediction errors for that route are 41.6 percentage points; 33.5 percentage points; and 22.8 percentage points.